

Remarks/Arguments

Amendments to the Specifications.

Applicant has amended the specification to vary the scope included in the original specification as needed to address the items in the Office Action. The term “iris-like” is replaced by a term involving a diaphragm shutter. This replacement is fully supported by Figures 5, 6, and 7, which show a mechanism/operation analogous to a diaphragm shutter.

Since the original claims recite a vessel that is waterborne, submersible, or airborne, the specification is amended to reflect these recitations. Ancillary aspects, such as descriptions of fluids used to effect buoyancy in the vessel, also are amended. For example, fluids are described as “less dense” rather than “lighter than air” to accord with the recitation of the vessel as waterborne, submersible, or airborne.

The original claims recite pneumatic, hydraulic, or microelectromechanical extension and retraction means. The specifications support these claim limitations. For example, page 5, lines 15- 18: “It should be readily apparent to one skilled in the art that the assemblies of the present invention can be extended and retracted by pneumatic, hydraulic, microelectromechanical systems (MEMS), or any other means known in the art. Assemblies actuated by any means known in the art are intended to be within the spirit and scope of the invention as claimed.” Therefore, these elements were added in new figures and described in two new paragraphs in the specification.

Objections to the Drawings

The Drawings were objected to under 37 CFR 1.83(a) for failing to show every feature of the invention specified in the claims. New Figures 16A and 16B are attached to address Claims 2 and 16 and Claims 3 and 17, respectively. New Figures 16C and 16D are attached to address Claims 4 and 18. Replacement Figures 10, 11, 12, 12A, 13, 14, and 15 are attached to address Claims 13 and 27. Applicant respectfully submits that the new and revised Figures satisfy the requirements of 37 CFR 1.83(a).

The Rejection of Claims 2-4, 8, 16-18, and 22 Under 35 U.S.C. §112

The Examiner rejected Claims 2-4, 8, 16-18, and 22 under 35 U.S.C. §112 first paragraph as failing to comply with the enablement requirement.

Applicant has attached new Figures 16A and 16B to enable Claims 2 and 16 and Claims 3 and 17, respectively. These figures show a pneumatic extension and retraction means and a hydraulic extension and retraction means. Applicant has attached new Figures 16C and 16D to enable Claims 4 and 18. These Figures show a MEMS extension and retraction means. Applicant also has amended the specification regarding the new Figures.

Applicant has attached revised Figures 6A, 6B, and 6C to illustrate the operation of the membrane in an assembly functioning in a diaphragm shutter like fashion as recited in Claims 8 and 22. The specification also is amended to explain this operation.

Applicant respectfully submits that the new and revised Figures and these amendments overcome the rejection under 35 U.S.C. §112, and reconsideration is requested.

The Rejection of Claims 11 and 25 Under 35 U.S.C. §112

The Examiner rejected Claims 11 and 25 under 35 U.S.C. §112 first paragraph as failing to comply with the written description.

Applicant has amended Claims 11 and 25 and the specification to address the Examiner's concerns. The phrase "iris like" has been replaced in Claims 11 and 25 and in the specification with the phrase "diaphragm shutter like." This limitation is supported by the specification and figures. In addition, the phrase "iris like" has been replaced in Claims 8 and 22 and in the related portions of the specification with the phrase "diaphragm shutter like." Applicant respectfully submits that these amendments to the claims and specification overcome the rejection under 35 U.S.C. §112, and reconsideration is requested.

The Rejection of Claim 10 Under 35 U.S.C. §112

The Examiner rejected Claim 10, under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Applicant has amended Claim 10 to depend from Claim 9 rather than Claim 8, thereby providing antecedent basis for "said plate" in Claim 10. Applicant respectfully submits that the amended claim overcomes the rejection under 35 U.S.C. §112, and reconsideration is requested.

The Rejection of Claims 1-3, 5-7, 9, 10, 12-17, 19-21, 23, 24, and 26 Under 35 U.S.C. §102

The Examiner rejected Claims 1-3, 5-7, 9, 10, 12-17, 19-21, 23, 24, and 26, under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,619,224 (Syfritt). Applicant respectfully traverses the rejection.

Anticipation requires that all of the elements of the claim be taught within the four corners of a single reference. Syfritt does not teach the truss assembly recited in amended Claims 1 and 15. Instead, Syfritt teaches an arrangement of folding panels (Figures 11a, 11b, and 11c). Col. 10, lines 8-18:

Vessel, generally designated 70, includes a keel tunnel 72 that extends the length of its hull bottom section, and a bottom hull shell portion that may form three different hull configurations as shown in FIGS. 11a, 11b, and 11c. Hull keel panels 76 and 77 pivot to tunnel roof 73, and keel hull panels 78 and 79 pivot to respective opposing keel tunnel sides 74 and 75. Any of the different types of pivoting drive systems disclosed herein may be used to effect pivotal movement of the bottom shell hull portion that includes keel panels 76, 77, 78, and 79 and is disposed across keel tunnel 72 as shown.

Syfritt does not describe the claimed invention element of a truss assembly. Therefore, Syfritt cannot anticipate the invention of Claims 1 and 15. Claims 2, 3, 5-7, 9, 10, and 12-14, dependent from Claim 1, also enjoy the same distinctions from the cited prior art. Claims 16, 17, 19-21, 23, 24, and 26, dependent from Claim 15, also enjoy the same distinctions from the cited prior art. The Applicant requests that the rejection be withdrawn.

The Rejection of Claims 1, 5, 7, 14, 15, 19, 21, and 28 Under 35 U.S.C. §102

The Examiner rejected Claims 1, 5, 7, 14, 15, 19, 21, and 28, under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,005,783 (Taylor). Applicant respectfully traverses the rejection.

The “McGraw-Hill Dictionary of Scientific and Technical Terms Second Addition” defines a truss as: “A frame, generally of steel, timber, concrete, or a light alloy, built from members in tension and compression.” Applicant respectfully submits that Taylor teaches a pivoting and folding arrangement of wing spars (members 9 10, and 11 in Figure 4), but that these spars are not in the tension and compression relationship defined for a truss. Thus, Taylor does not teach the truss assembly recited in amended Claims 1 and 15.

Taylor does not describe the claimed invention element of a truss assembly. Therefore, Taylor cannot anticipate the invention of Claims 1 and 15. Claims 5, 7, and 14, dependent from Claim 1, also enjoy the same distinctions from the cited prior art. Claims 19, 21, and 28, dependent from Claim 15, also enjoy the same distinctions from the cited prior art. The Applicant requests that the rejection be withdrawn.

The Rejection of Claims 1, 13, 15, and 27, Under 35 U.S.C. §102

The Examiner rejected Claims 1, 13, 15, and 27, under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 3,157,145 (Farris et al.). Applicant respectfully traverses the rejection.

Applicant respectfully submits that Farris teaches pivoting foils 210, 212, 214, and 216, but does not teach the claimed invention element of a truss assembly. Therefore, Farris cannot anticipate the invention of Claims 1 and 15. Claim 13, dependent from Claim 1, also enjoy the same distinctions from the cited prior art. Claim 27, dependent from Claim 15, also enjoy the same distinctions from the cited prior art. The Applicant requests that the rejection be withdrawn.

Attorney Docket No. LKMP:112US
U.S. Patent Application No. 10/613,172
Reply to Office Action of June 4, 2004
Date: August 26, 2004

The Objection of Claims 4, 8, 11, 22, and 25 as Being Dependent Upon a Rejected Base Claim

Claims 4, 8, 11, 22, and 25 were objected to as being dependent upon a rejected base claim, but the Examiner indicated that these claims would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicant has amended Claims 1 and 15 to overcome the rejections cited in the Office Action. Therefore, Applicant respectfully submits that Claims 4, 8, and 11, dependent from Claim 1, no longer depend upon a rejected base claim; and, Claims 22 and 25, dependent from Claim 15, no longer depend upon a rejected base claim. Applicant respectfully submits that these claims are now in condition for allowance, which action is courteously requested.

Conclusion

Applicant respectfully submits that all pending claims are now in condition for allowance, which action is courteously requested.

Respectfully submitted,



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Appendix

Amendments to the Drawings

1) The Drawings were objected to under 37 CFR 1.83(a) for failing to show every feature of the invention specified in the claims.

New Figures 16A, 16B, 16C, and 16D and revised Figures 10, 11, 12, 12A, 13, 14, and 15 are attached.

- Pneumatic extension and retraction means: new Figures 16A and 16B show a pneumatic extension and retraction means of Claims 2 and 16. In Figures 16A and 16B, the means can be pneumatic or hydraulic. In Figure 16A, the means is retracted and in Figure 16B, the means is extended.
- Hydraulic extension and retraction means: new Figures 16A and 16B show a hydraulic extension and retraction means of Claims 3 and 17.
- Microelectromechanical extension and retraction means: new Figures 16C and 16D show a microelectromechanical extension and retraction means of Claims 4 and 18. In Figure 16C, the assembly 38 is extended and in Figure 16D, the assembly 38 is retracted.
- Submersible vessel: revised figures 10, 11, 12, 12A, 13, 14, and 15 show fluid-tight hatches and portholes for the compartments in the respective vessels, making the compartments suitable for a submersible vessel, as recited in Claims 13 and 27.

2) The Examiner rejected Claims 8 and 22 under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement. Revised Figures 6A, 6B, and 6C show the disposition of the membrane during retraction of the truss assembly.

3) Drawings 4A and 4B have been amended to shown elements 702 and 802 of Figures 16A, 16B, 16C, and 16D.